

Notice of Allowability

Application No.

09/722,440

Examiner

Chih-Min Kam

Applicant(s)

POLLESELLO ET AL.-

Art Unit

1653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/11/04.
2. ☒ The allowed claim(s) is/are 9, 11, 12 and 20-32.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☒ to Paper No. 3.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- 1 ☐ Notice of References Cited (PTO-892)
- 2 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3 ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. 7/11/03
- 4 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5 ☐ Notice of Informal Patent Application (PTO-152)

6 ☒ Interview Summary (PTO-413), Paper No. 0304.

7 ☒ Examiner's Amendment/Comment

8 ☐ Examiner's Statement of Reasons for Allowance

9 ☐ Other

Christopher S. F. Low

CHRISTOPHER S. F. LOW
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1800

An **Examiner's Amendment** to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kendrick Patterson on March 3, 2004.

Examiner's Amendments to the Specification:

Please replace the first paragraph after the title at page 1 with the following paragraph:

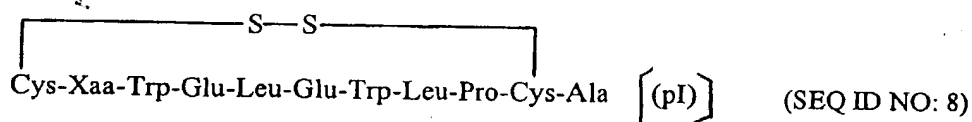
This application is a divisional of Application No. 09/252,063, filed February 18, 1999, now U. S. Patent 6,538,022, which is a continuation-in-part of U. S. Application No. 08/937,117, filed September 24, 1997, now abandoned. The entirety of each of these applications is incorporated by reference herein.

Examiner's Amendments to the Claims:

Cancel claim 33.

Claims 9, 11, 20, 21 and 31 have been amended as follows:

9. (Currently amended) A cyclic peptide having the structure:

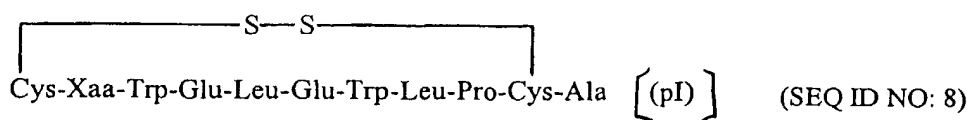


wherein Xaa is Tyr or Ala;

11. (Currently amended) [A] The peptide of claim 9, wherein Xaa is Tyr (SEQ ID NO:10).

20. (Currently amended) A method of identifying or designing a phospholamban deactivator, comprising the steps of:

- (a) obtaining a three dimensional structure of a cyclic peptide



wherein Xaa is Tyr or Ala;

- (b) creating a three dimensional model of a complex of the cyclic peptide bound as a phospholamban deactivator to the phospholamban cytosolic domain of phospholamban or a fragment of the phospholamban cytosolic domain that comprises a ligand binding site;

- (c) employing the three dimensional model of the complex to identify the ligand binding site on the phospholamban cytosolic domain or on said fragment of the phospholamban cytosolic domain, wherein the phospholamban deactivator binds to the phospholamban cytosolic domain or to said fragment of the phospholamban cytosolic domain at said ligand binding site;

- (d) selecting a candidate molecule that possesses steric and electrostatic complementarity with the ligand binding site and testing same for function as a phospholamban deactivator; and

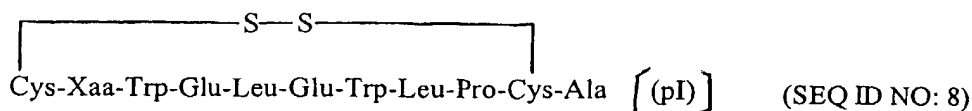
- (e) identifying the selected candidate molecule as a phospholamban deactivator.

21. (Currently amended) The method of claim 20, wherein step (d) comprises[:] synthesizing and testing the phospholamban deactivator for activation of Ca^{+2} -ATPase in the presence of phospholamban.

31. (Currently amended) A method of identifying a target area on the surface of phospholamban, at which a phospholamban deactivator binds, the method comprising the steps of:

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- (a) obtaining a three dimensional structure of a cyclic peptide



wherein Xaa is Tyr or Ala;

- (b) creating a three dimensional model of a complex of the cyclic peptide as a phospholamban deactivator bound to phospholamban cytosolic domain or a fragment of the phospholamban cytosolic domain that comprises a ligand binding site; and

- (c) employing a computer-aided molecular modeling program and the three dimensional model of the complex to identify the target area on the surface of phospholamban, wherein said phospholamban deactivator binds to the phospholamban cytosolic domain or to said fragment of the phospholamban cytosolic domain at said ligand binding site.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Min Kam whose telephone number is (571) 272-0948. The examiner can normally be reached on 8.00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on (571) 272-0951. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 308-4227 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Chih-Min Kam, Ph. D. *CMK*
Patent Examiner

Christopher S. F. Low
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March 3, 2004